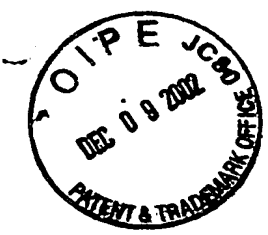


The diagram illustrates the architecture of an MRI system 10. A patient is positioned within a magnet assembly 140, which includes a bore 141 and a patient table 152. The magnet is connected to a scan room interface 134 and a patient positioning system 134. A physiological acquisition controller 133 is connected to the magnet and a system control unit 118. The system control unit 118 contains a CPU 119, a pulse generator 120, a transceiver 121, memory 122, and an array processor 123. It is also connected to a computer system 100, which includes a CPU 108, memory 107, and an image processor 106. The computer system is further connected to a display 104 and a keyboard 102. The system control unit 118 is connected to a pre-amplifier 151 and an RF amplifier 154, which are connected to a T/R switch 153. The T/R switch is connected to the magnet assembly 140. The magnet assembly 140 also includes gradient amplifiers 127 (Gz, Gy, Gx) and a physiological acquisition controller 133.

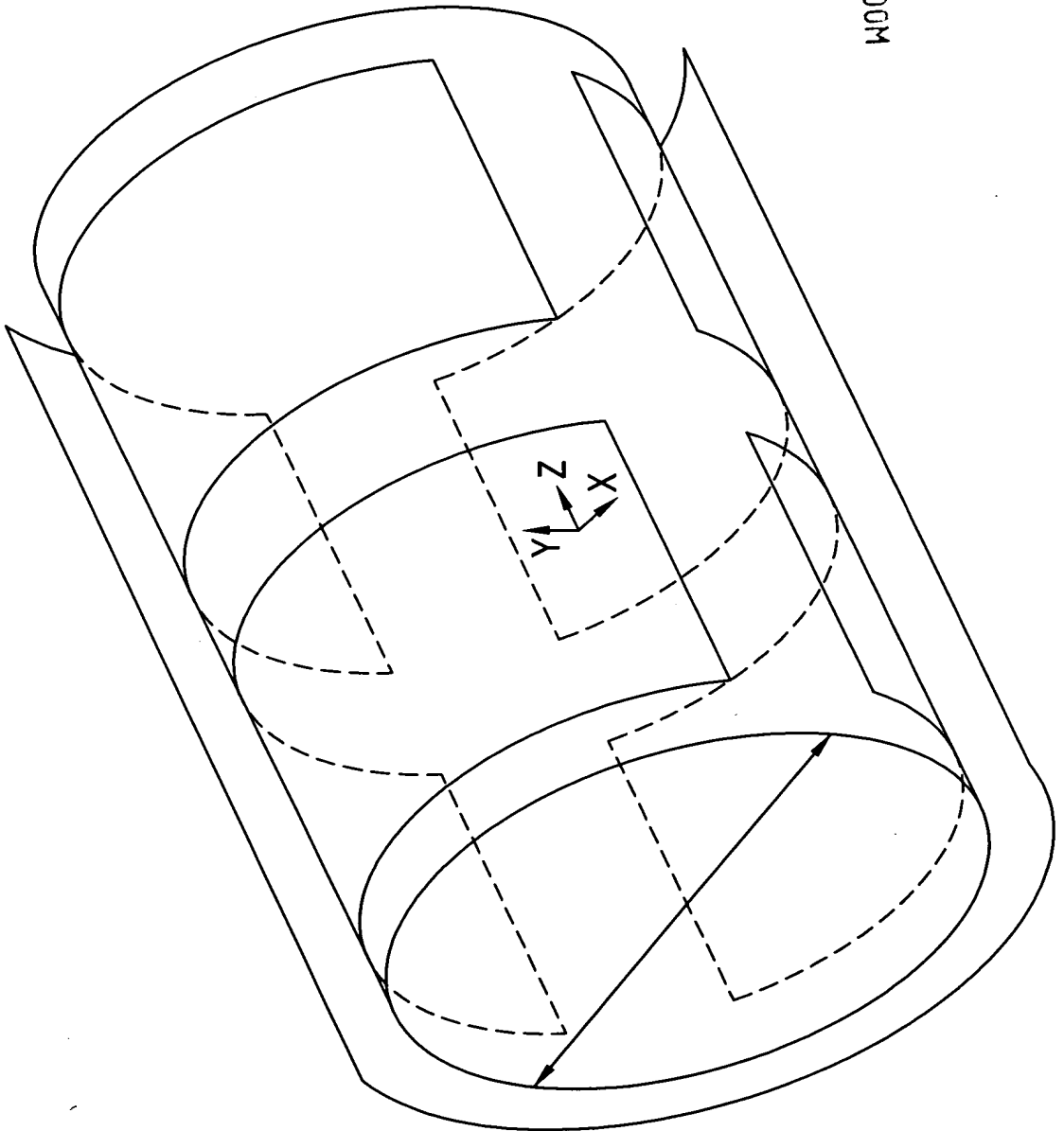


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FIG. 2



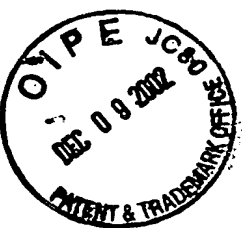


FIG. 3

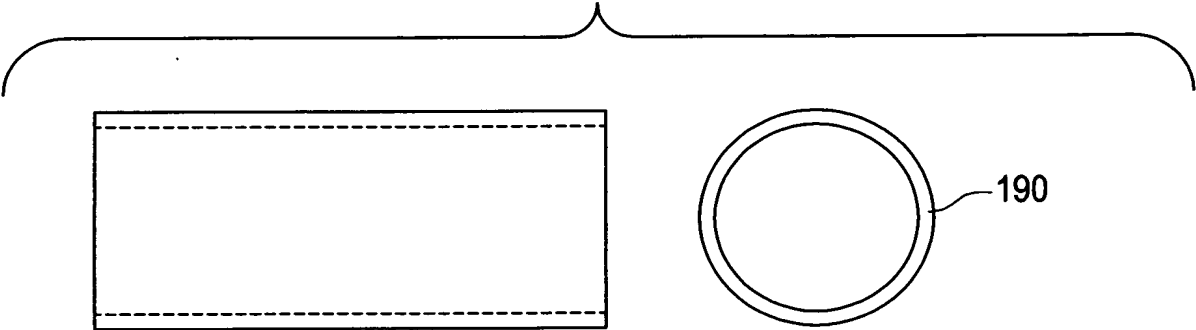


FIG. 4

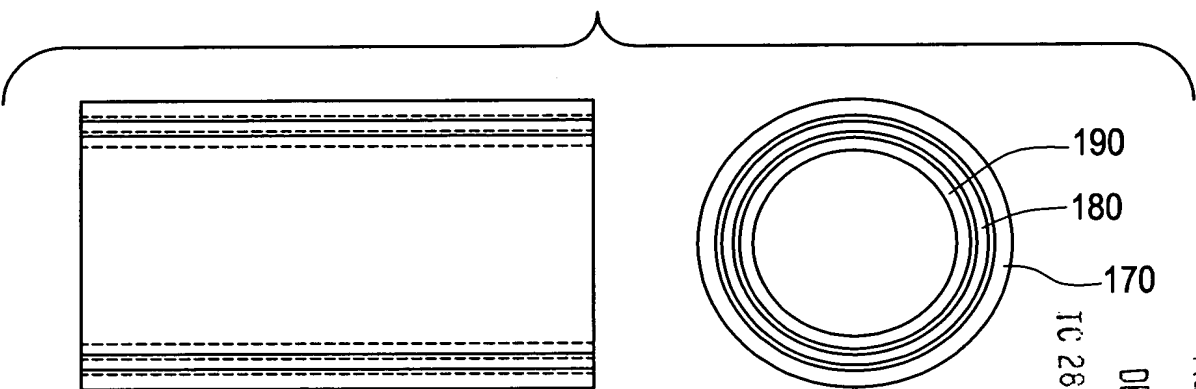
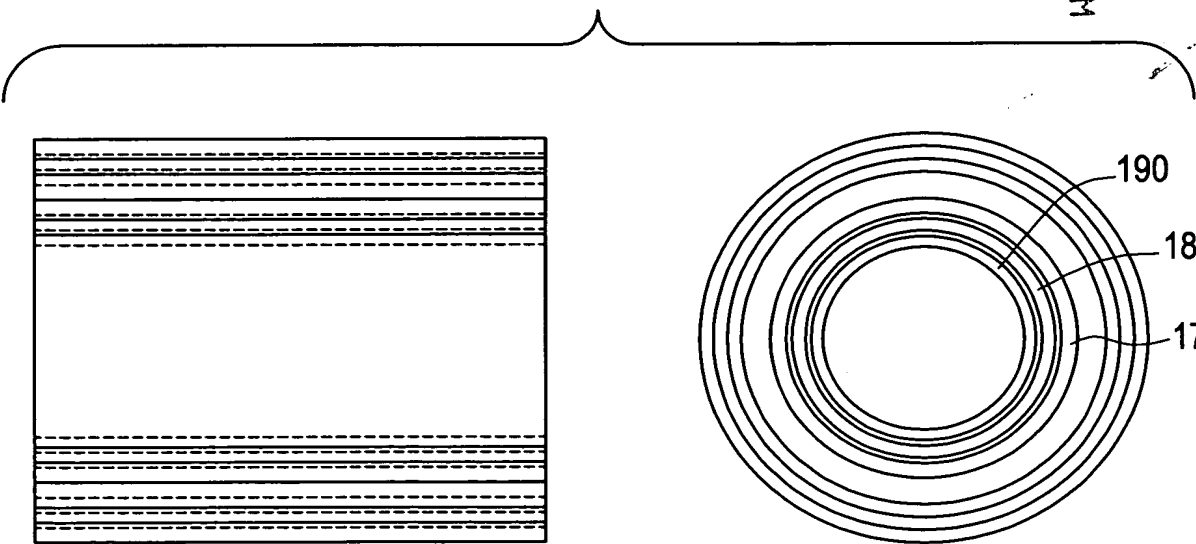


FIG. 5



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GRADIENT COIL APPARATUS FOR
MAGNETIC RESONANCE IMAGING

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FIG. 6

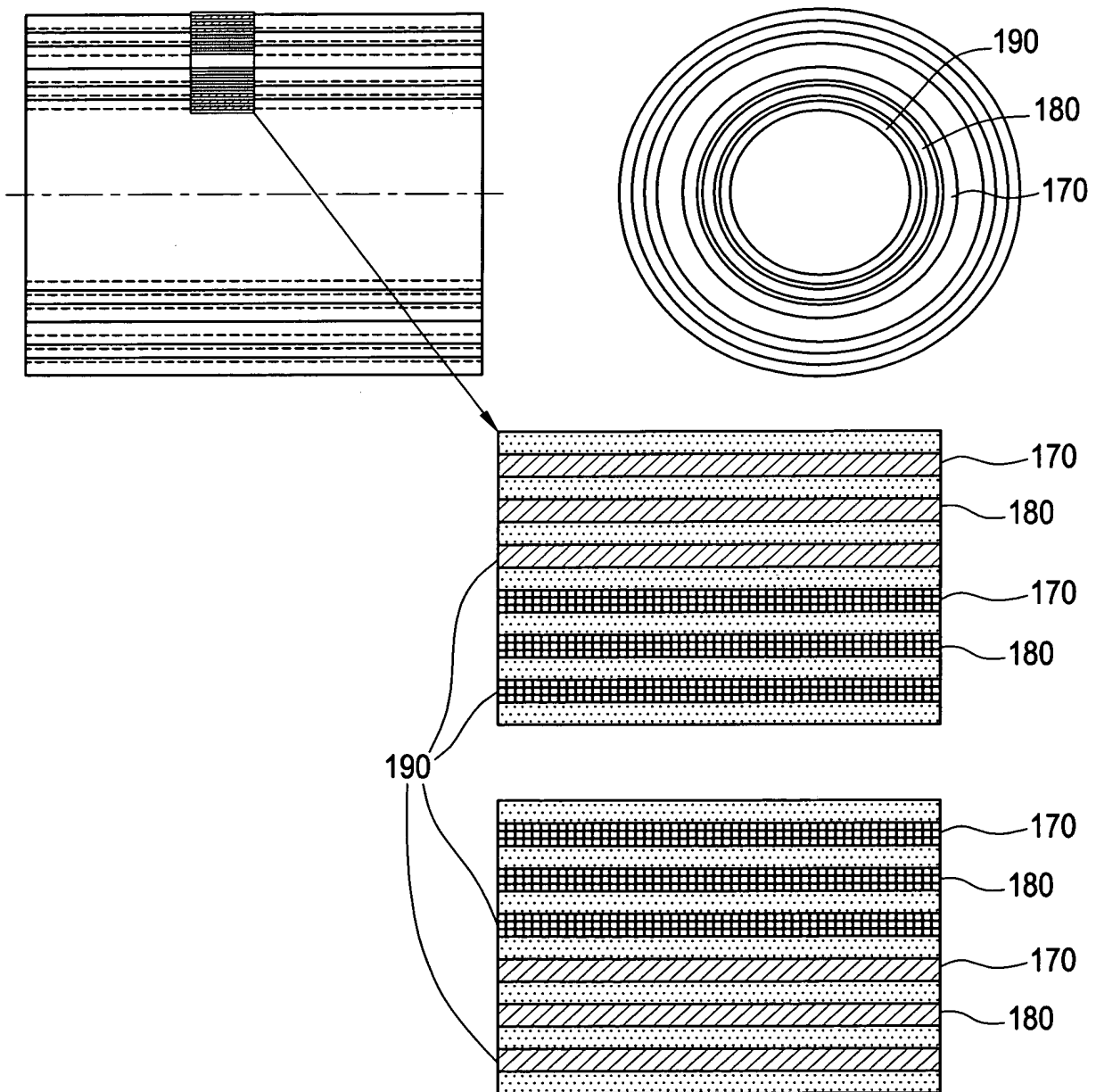
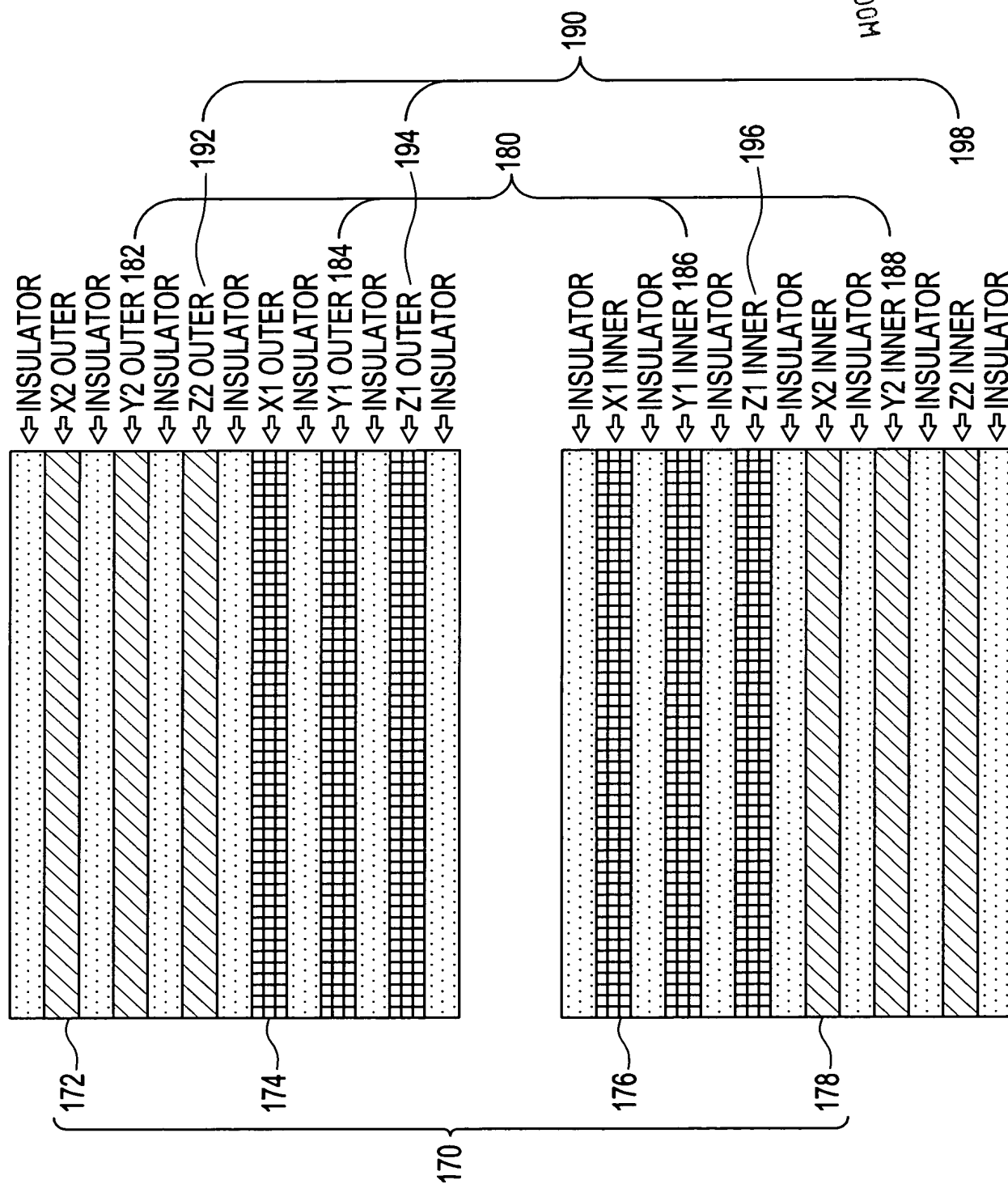
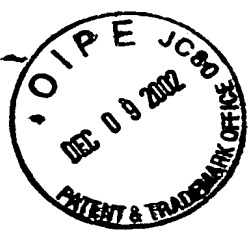


FIG. 7



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GRADIENT COIL APPARATUS FOR
MAGNETIC RESONANCE IMAGING

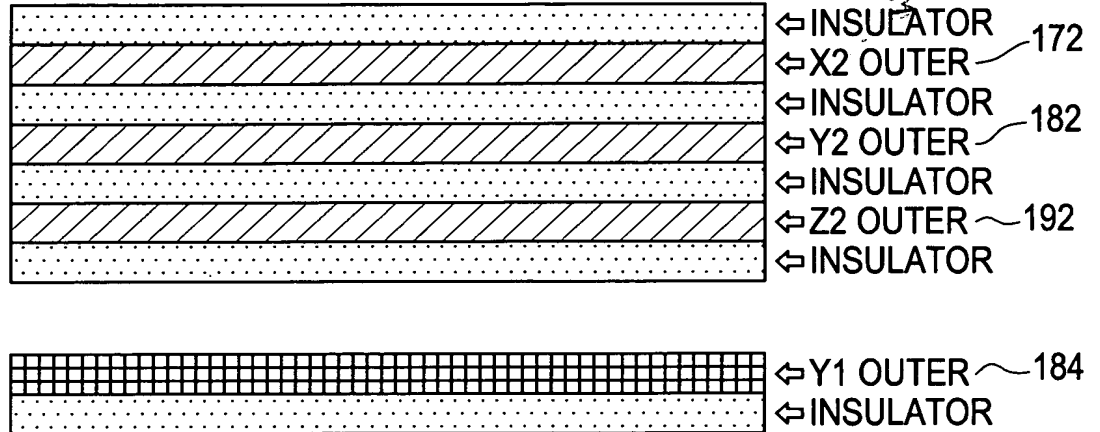
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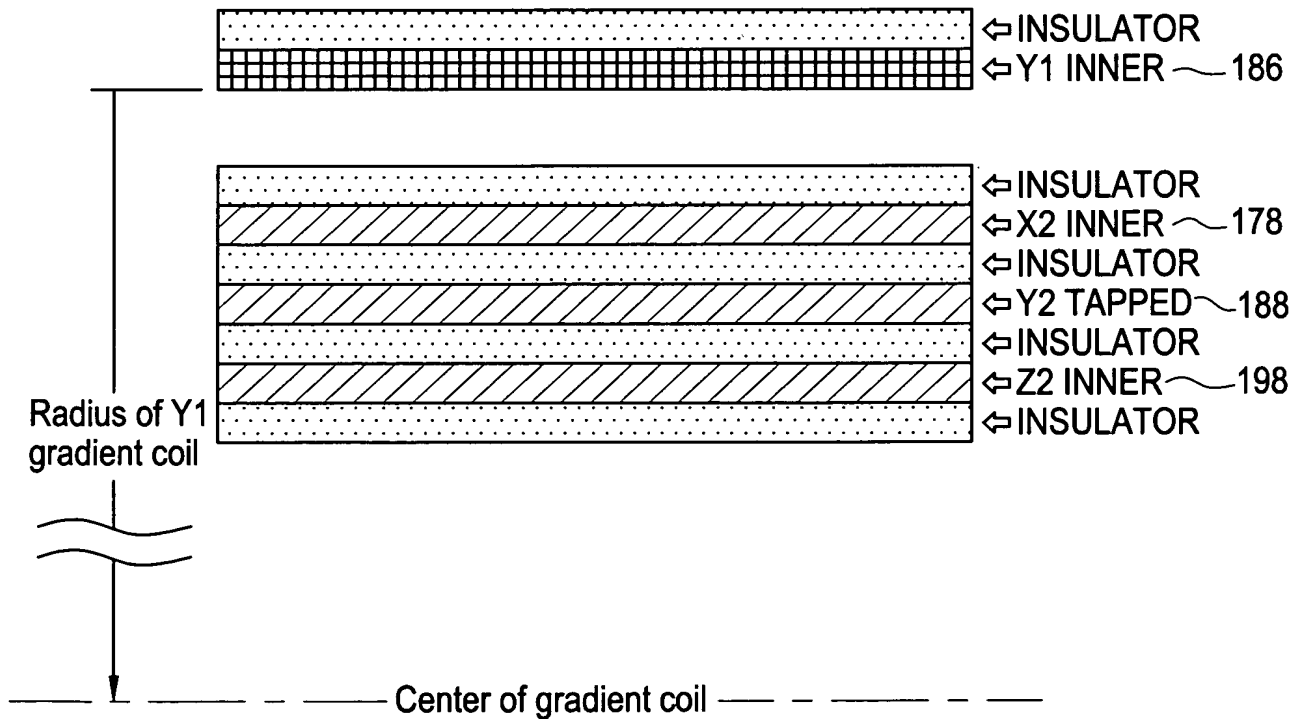
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FIG. 8

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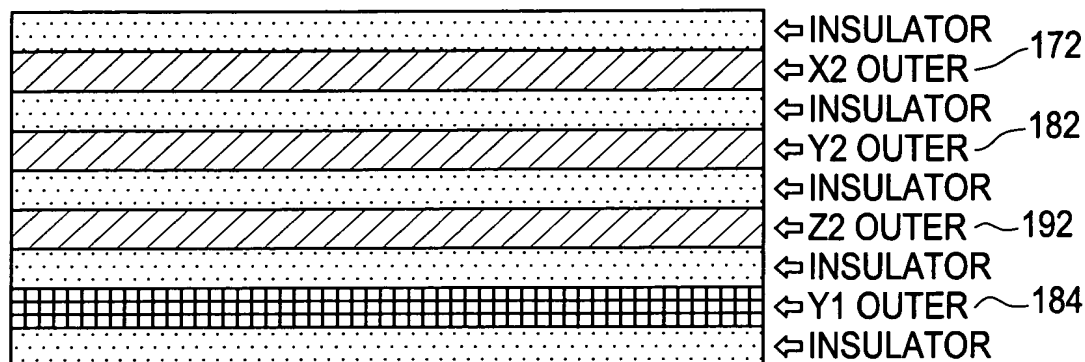
This drawing shows the deleted coils





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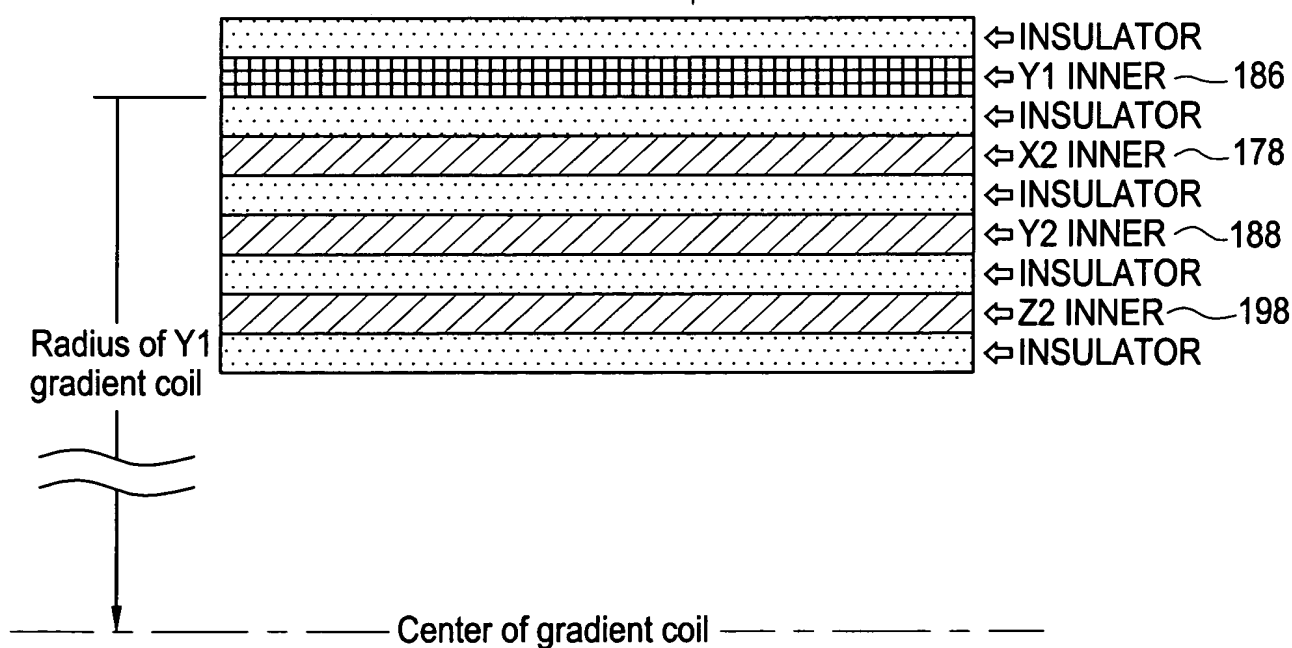
FIG. 9

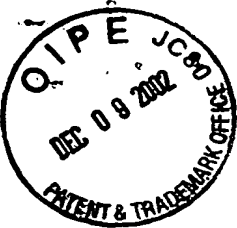


This drawing shows the Y1 axis coil position moved into the newly available space.

Reducing the Y1 axis inner coil diameter substantially increases its efficiency.

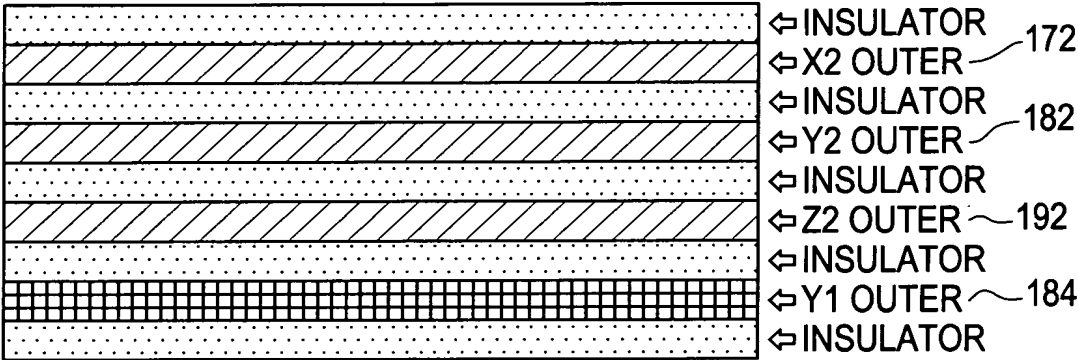
Moving the outer Y1 axis coil further away from the inner y axis coil also increases efficiency.





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FIG. 10



If the Y1 axis functionality is obtained by tapping the Y2 axis coil, then a separate inner Y1 axis coil is not needed.

A separate Y1 axis outer coil may still be needed due to the uniquely different fringe field pattern when the Y2 inner axis coil is in tapped mode.

